Highway Safety Improvement Program

Data Driven Decisions

Connecticut
Railway-Highway Crossing Program
2014 Annual Report

Prepared by: Connecticut

Disclaimer

Protection of Data from Discovery & Admission into Evidence

Section 148(h)(4) mandates that data compiled or collected for the preparation of the HSIP Report "…shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in an action for damages arising from any occurrence at a location identified or addressed in such reports…" This information is also protected by 23 U.S.C. 409 (discovery and admission as evidence of certain reports and surveys).

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Executive Summary

CTDOT's Division of Traffic Engineering Railroad/Highway At-Grade Crossing Section is responsible for designing and reviewing designs of all public and private railroad/highway at-grade crossings in the State of Connecticut. This section is also responsible for obligating railroad/highway crossing improvement projects under Federal Highway Administration's (FHWA) Highway Safety Improvement Programs. Under the Moving Ahead for Progress in the 21st Century Act (MAP-21), the FHWA has set aside $220 million per year for the Railroad/Highway Crossing Program, also known as the Section 130 Program. Under the 130 Program, each State is required to conduct and systematically maintain a survey of all highways to identify those railroad crossings that may require separation, relocation or protective devices, and establish and implement a schedule of projects for this purpose. It should be noted that the information listed in this report is based upon CTDOT's Railroad/Highway Crossing Program for the Federal Fiscal Year of October 1, 2012 to September 30, 2013.

Introduction

Title 23 of United States Code (USC) Section 130 provides funding to States annually for the elimination of hazards at railway-highway crossings. One of the requirements of 23 USC 130 is that States must submit an annual report on the progress and effectiveness of implementing the program. The report shall include, but not be limited to, the number of projects undertaken, their distribution by cost range, road system, nature of treatment, and subsequent crash experience at improved locations.

Program Structure

Reporting period for railway-highway crossing program funding.

☐ Calendar Year
☐ State Fiscal Year
☒ Federal Fiscal Year

Describe the overall process of how Section 130 funds are administered in the State.

Describe how funds are distributed and administered in the State.

There are five hundred forty-seven (547) public at-grade crossings in the State of Connecticut with three hundred sixty six (366) of these crossings being active and one hundred eighty one (181) of the crossings currently being inactive (out of service) or temporarily closed. Since the program's inception in 1976, two hundred twenty-two (222) locations have received improvements, of which seventy-nine (79) locations were improved under programs other than Section 130. Presently the available funding level for Section 130 is approximately 1.2 million dollars per year, which can support about one or two new crossing projects per year. When projects are initiated under Section 130, they are for a total improvement of the crossing and include installation and/or modernization of active railroad warning devices, track circuitry, crossing surface improvements, track alignment, drainage, sightline improvements, sidewalk treatments, pavement markings and sign installations. The average cost of these improvements range between $500,000 and $1,500,000 depending upon the complexity of the project.

Describe the method(s) used for project selection.

In prioritizing the review of candidate location, the Division of Traffic Engineering utilizes a

railroad/highway at-grade crossing priority list, which accounts for vehicular traffic volumes, train count and number of vehicle/train accidents. After the priority list is established and on-site reviews are conducted, projects are initiated. Recommended Project Memoranda are then forwarded to initiate crossing improvements in future design years. The program and the list do not include private crossings.

Describe the method(s) used to measure effectiveness (in terms of reducing fatalities and serious injuries) of the projects and program.

After the improvements have been implemented and the project has been completed, the protection factor for that specific crossing is updated and the priority list is updated, thereby creating a new lower hazard index number for that crossing.

Describe any noteworthy efforts the State has used to effectively deliver a successful program.

CTDOT has completed a new priority list for the 130 Program. All future projects will be initiated from the new list.

Describe the status of data acquisition and analysis efforts (including inventory and other efforts utilizing the two percent funding allowance

As stated above, CTDOT's Division of Traffic Engineering has completed a new priority list for future 130 projects. The priority list is based on relative hazards for each crossing as determined by thefollowing formula (an adaptation of the New Hampshire Index):

$$HI = \frac{(T + 1) \times (A + 1) \times AADT \times PF}{100}$$

Variables:

HI – Calculated Hazard Index

T – Train movements per day

A – # of vehicle/train accidents in the last 5 years

AADT – Annual Average Daily Traffic

PF – Protection Factor

Protection Factors:

1.250 – no active or passive warning devices

1.000 – stop sign control

0.750 – stop and protect control

0.750 – manually activated traffic signal

0.250 – railroad flashing lights

0.250 – traffic signal control with preemption

0.010 – gates with railroad flashing lights

0.001 – inactive rail line

0.000 - closed crossing

Field reviews of each public railroad/highway at-grade are performed to determine what existing protection factors/treatments are currently in place. The Railroads are contacted to determine the daily train movements at the crossing. CTDOT refers to the FRA's crossing inventory website for accident history at the crossing.

Provide the total number of public crossings within the State, including the type of crossing protection.

Crossing type	Number of Crossings
At-grade active warning devices	366
Grade-seperated RR over road	236
At-Grade passive warning devices	98
Grade separated under road	387

Provide the specific program emphasis areas, and if necessary a discussion of significant variations from previous reports.

During field reviews of the public railroad crossings it was revealed that the passive warning devices, pavement markings and signing, were worn or missing at many of the crossings. In Connecticut, the state statute required that the owner of the road be responsible for performing an inspection of the pavement markings and signing annually; however, language in the Statue was recently revised to remove the annual inspection requirement. This was done at the request of the municipalities who do not have the work force or financial capability to conduct such inspections and replace the required pavement markings and signing. As a result, CTDOT has initiated three projects with 130 funds for future fiscal years; Project No. 170-3315, Project No. 171-0386 & Project No. 172-0431, that will install signing and pavement markings at all public railroad/highway at-grade crossings in Connecticut.

Describe any other aspects of the Section 130 program effectiveness on which you would like to elaborate.

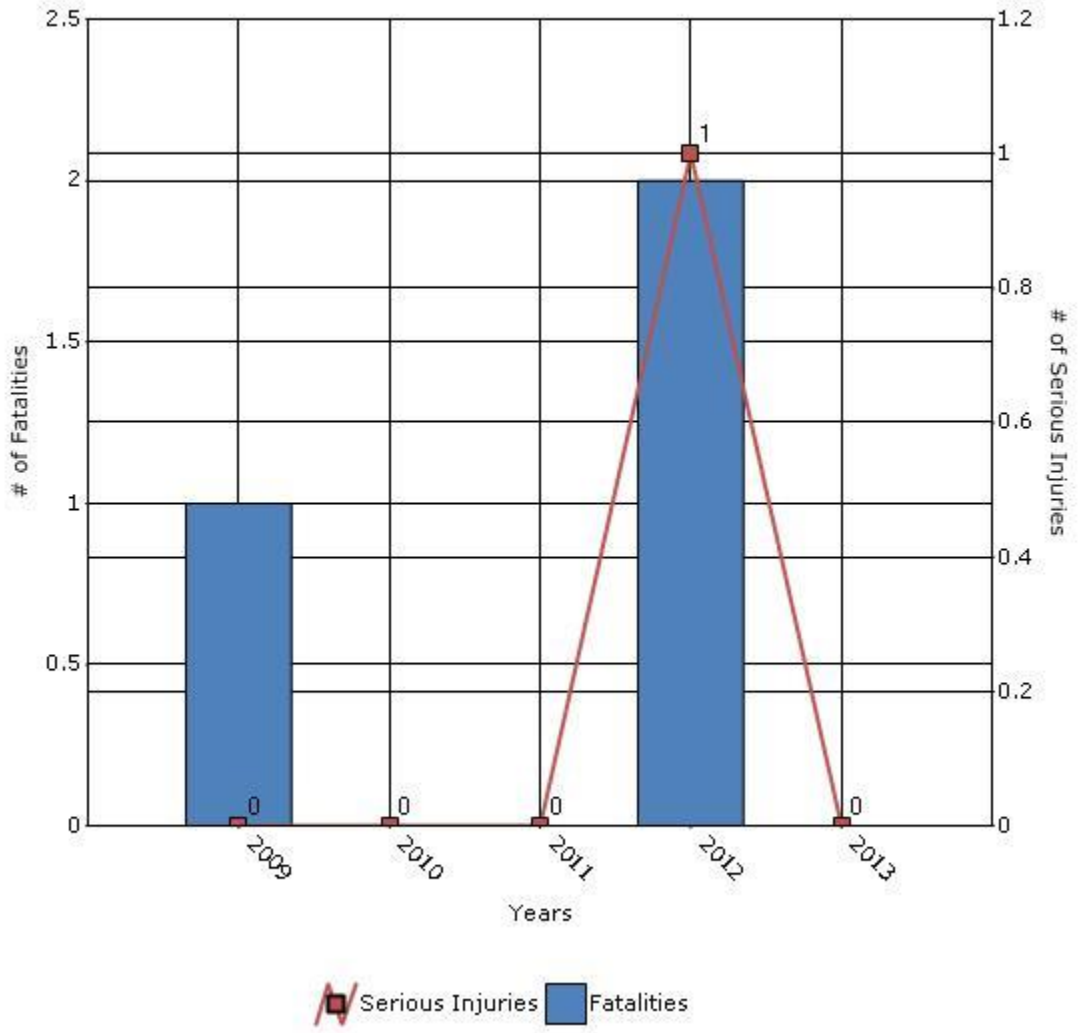
Nothing at this time.

Input data on a variety of performance measures.

Performance Measures*	2009	2010	2011	2012	2013
Fatalities	1	0	0	2	0
Serious Injuries	0	0	0	1	0

*Performance measure data is presented using a five-year rolling average.

Number of Fatalities and Serious Injuries for last 5 years



Project Metrics

Project Listing

Project Number	Location	USDOT Crossing Number	Functional Classification	Project Type	Crossing Protection	Crossing Type	Cost	Federal Share	Funding Type
99-114RW	Rte 7/44 (East Xing)	504172C	Rural Principal Arterial - Other	Active grade crossing equipment Installation/upgrade	Active	At-grade active warning devices	50000	50000	Section 130
17-143CN (project modification)	Central Street	500989D	Urban Local Road or Street	Active grade crossing equipment Installation/upgrade	Active	At-grade active warning devices	82862	82862	Section 130
99-115RW	Rte 7/44 (West Xing)	504296V	Rural Principal Arterial - Other	Active grade crossing equipment Installation/upgrade	Active	At-grade active warning devices	100000	100000	Section 130

Previously Completed Projects

Project Number	Location	USDOT Crossing Number	Functional Classification	Project Type	Crossing Protection	Crossing Type	Cost	Federal Share	Funding Type
none	none								

Before Crash Data (Years)	Fatal Crashes (Before)	Serious Injury Crashes (Before)	Other Injury Crashes (Before)	PDO-only (Before)	Crash Data Other (Before)	After Crash Data (Years)	Fatal Crashes (After)	Serious Injury Crashes (After)	Other Injury Crashes (After)	PDO-only (After)	Crash Data Other (After)	Effectiveness

Glossary

5 year rolling average means the average of five individual, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

HMVMT means hundred million vehicle miles traveled.

Performance measure means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Transfer means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.